SERVICE DATA
FILE NO. 170-155

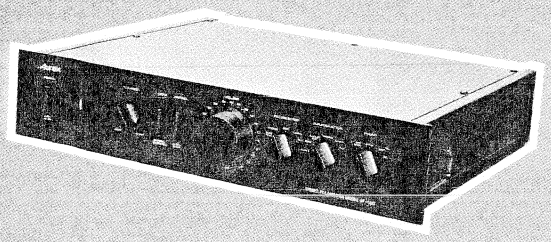
TOSHIBA

STEREO PREAMPLIFIER

SY-188

LAMBDA

SY88



SPECIFICATIONS

■ General

Power Supply:	220V — 50 Hz for Europe or 240V — 50 Hz for the United Kingdom and Australia
Power Consumption:	36W
Weight:	9 kg
Dimensions:	450(W) x 93(H) x 386(D) mm

■ Amplifier

Total Harmonic Distortion:	0.002% 3V 1 kHz
Frequency Response:	AUX 10 Hz∿100 kHz ($^{+0}_{-1}$dB) PHONO (RIAA) ±0.2 dB (20 Hz ∿ 20 kHz)
S/N (IHF A Network):	109 dB (AUX) 87 dB (PHONO-MM) 68 dB (PHONO-MC)
Input Sensitivity/ Impedance:	PHONO-MM 2.0mV/100Ω, 47kΩ PHONO-MC 0.1mV/10Ω, 100Ω TUNER, AUX, TAPE 150mV/47kΩ
Output Level:	REC OUT 150mV PRE OUT 1V
Phono Overload Level:	MM 450mV 0.002% 1 kHz MC 23mV 0.002% 1 kHz

Specifications are subject to change without notice.

TE,TU,AY

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1. OPERATING CONTROLS

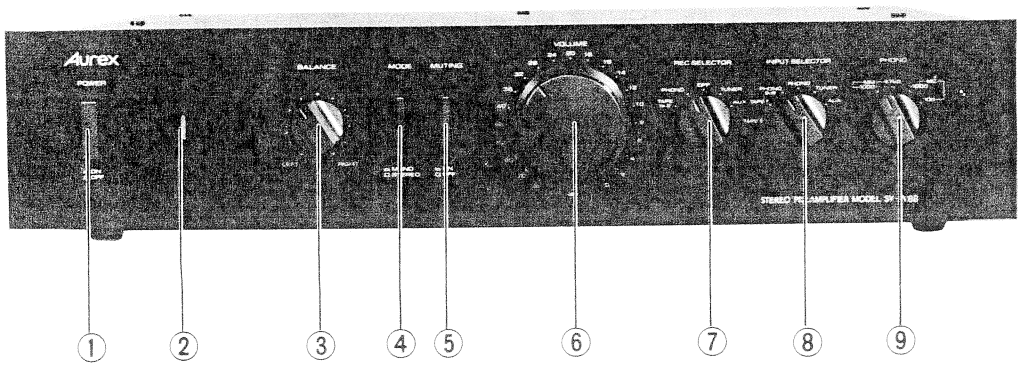


Figure 1

① **Power Switch**
Depress this switch to turn the power on, depress again to turn the power off. The LED lamp lights up when power is on.

② **Power Indicator**
When the power is on, the lamp lights up red, and after 4 to 8 seconds, it changes to green. While the indicator is red, because the muting circuit is in operation, speakers will be silent.

③ **Balance Control**
Turn this knob to adjust volume balance between left and right speakers.
Turning to left, sound from the right speaker is lowered by −0.5, −1.0, −2.0, −3.0 and −60 dB.
Turning to right, sound from the left speaker is lowered by −0.5, −1.0, −2.0, −3.0 and −60 dB.

④ **Mode Switch**
Set this switch in mono (depressed) position for monaural reproduction when the input signal is monaural or to convert stereo input signal to monaural form. Otherwise keep the switch in stereo (normal) position.

⑤ **Muting Switch**
This switch is used to temporarily reduce volume, for example, when you want to cut out stylus contact noise while cueing.

⑥ **Volume**
Turn this knob to adjust volume level.

⑦ **Rec Selector**
Use this selector to choose a programme source for recording. Note that you may record from one source while listening to another. Note also that the function selectors ⑨ are used only to choose the programme source for listening, not for recording. Since the signal to be recorded transits the function selectors' electronic circuit, however, the amplifier power switch should be ON during recording. Signal interference or increased distortion may otherwise result.

⑧ **Function Selectors**
TAPE 1: For a tape deck connected to TAPE 1 terminals
TAPE 2: For a tape deck connected to TAPE 2 terminals
PHONO
SUB: For a turntable. In this position, the subsonic filter operates, decreasing noise at very low frequencies resulting from unfavourable warps in the disc.
PHONO: For a turntable
TUNER: For a radio tuner
AUX: For any kind of audio equipment (excluding turntables and microphones)
Note: To choose programme source for recording, use REC SELECTOR ⑦. For detailed description of the rec selector, refer to Operation

⑨ **MC/MM Cartridge Switch**
Switch to the MC position when using an MC-type cartridge and the MM position when using an MM-type cartridge.

2. SYSTEM CONNECTIONS

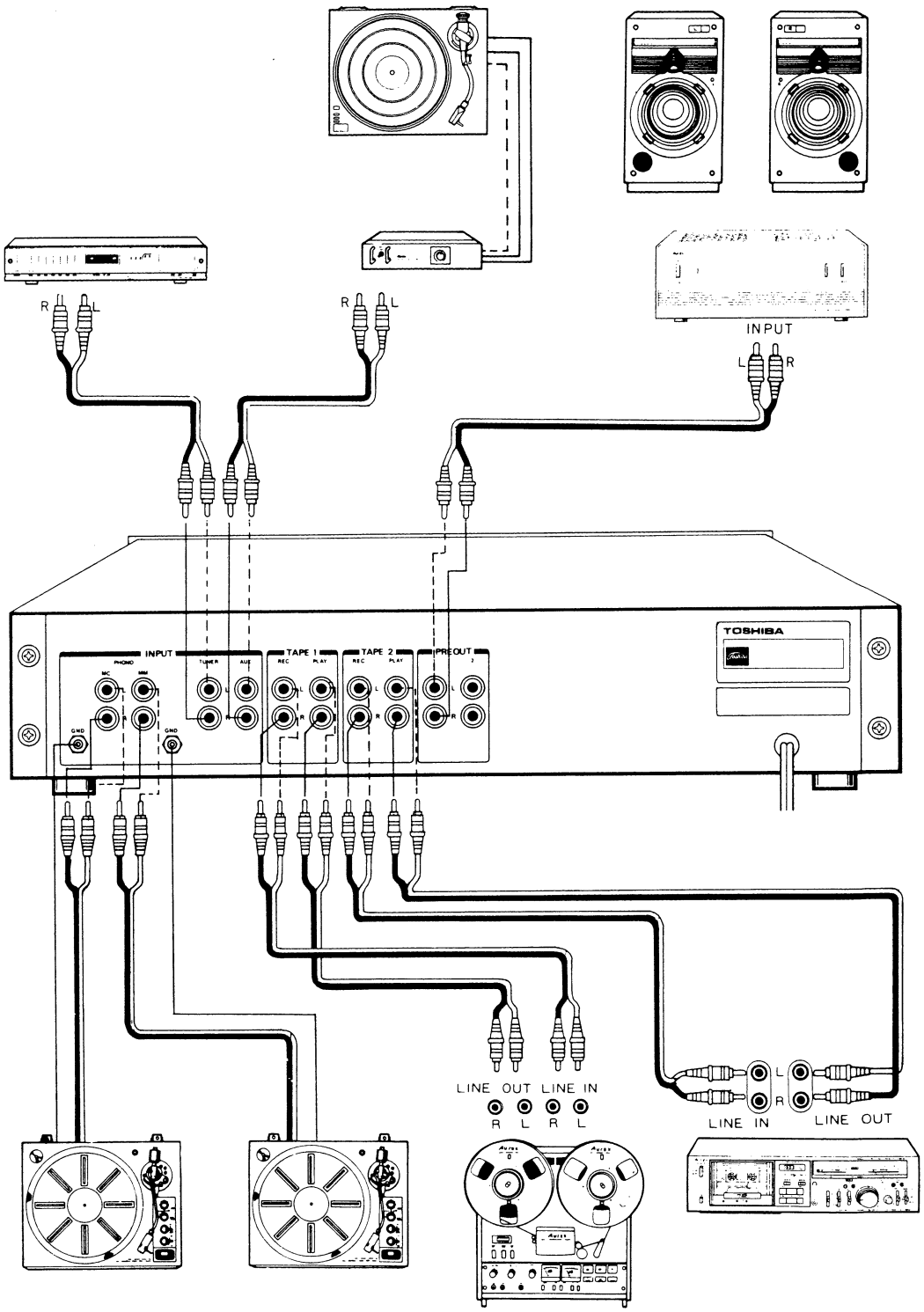


Figure 2

3. DISASSEMBLY INSTRUCTIONS

TOP COVER REMOVAL

1. Remove eight screws Ⓐ (3ϕ x 8mm) and the top cover can be removed as shown in Figure 3.

FRONT PANEL REMOVAL

1. Remove the top cover as shown in Figure 3.
2. Loosen five screws Ⓑ to pull five knobs out as shown in Figures 4 and 5.
3. Remove six screws Ⓓ, Ⓔ (3ϕ x 8mm) and the front panel can be removed out as shown in Figure 4 and Figure 6.

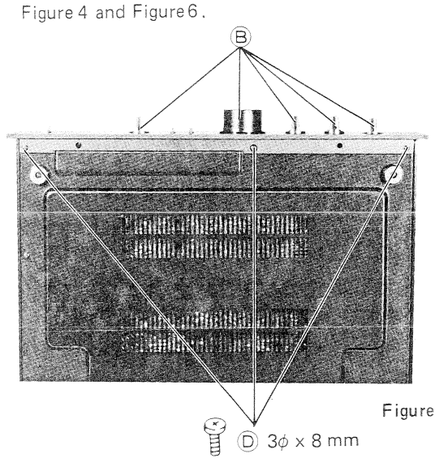


Figure 4

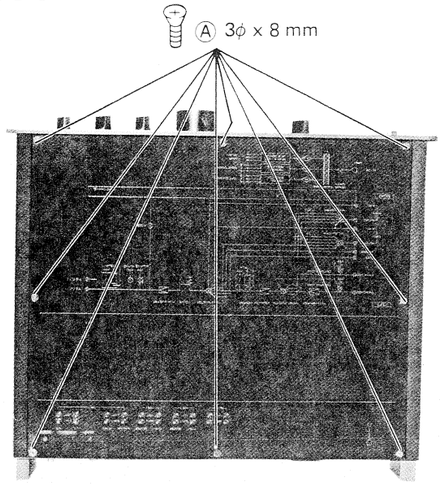


Figure 3

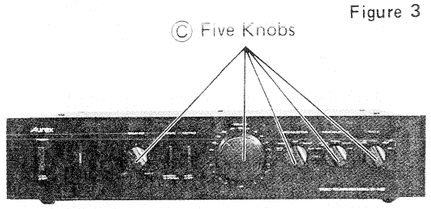


Figure 5

BOTTOM PLATE REMOVAL

1. Remove five screws Ⓕ (3ϕ x 8mm) and the bottom plate can be removed out as shown in Figure 7.

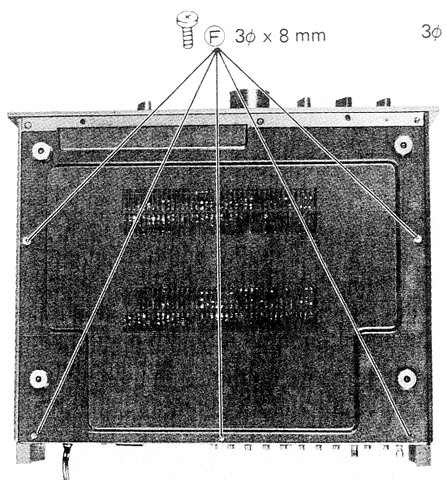


Figure 7

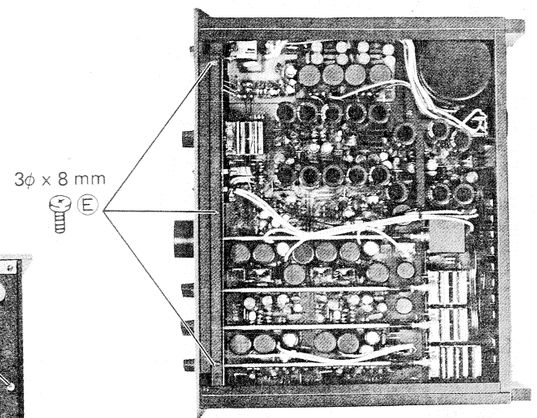


Figure 6

4. BLOCK DIAGRAM

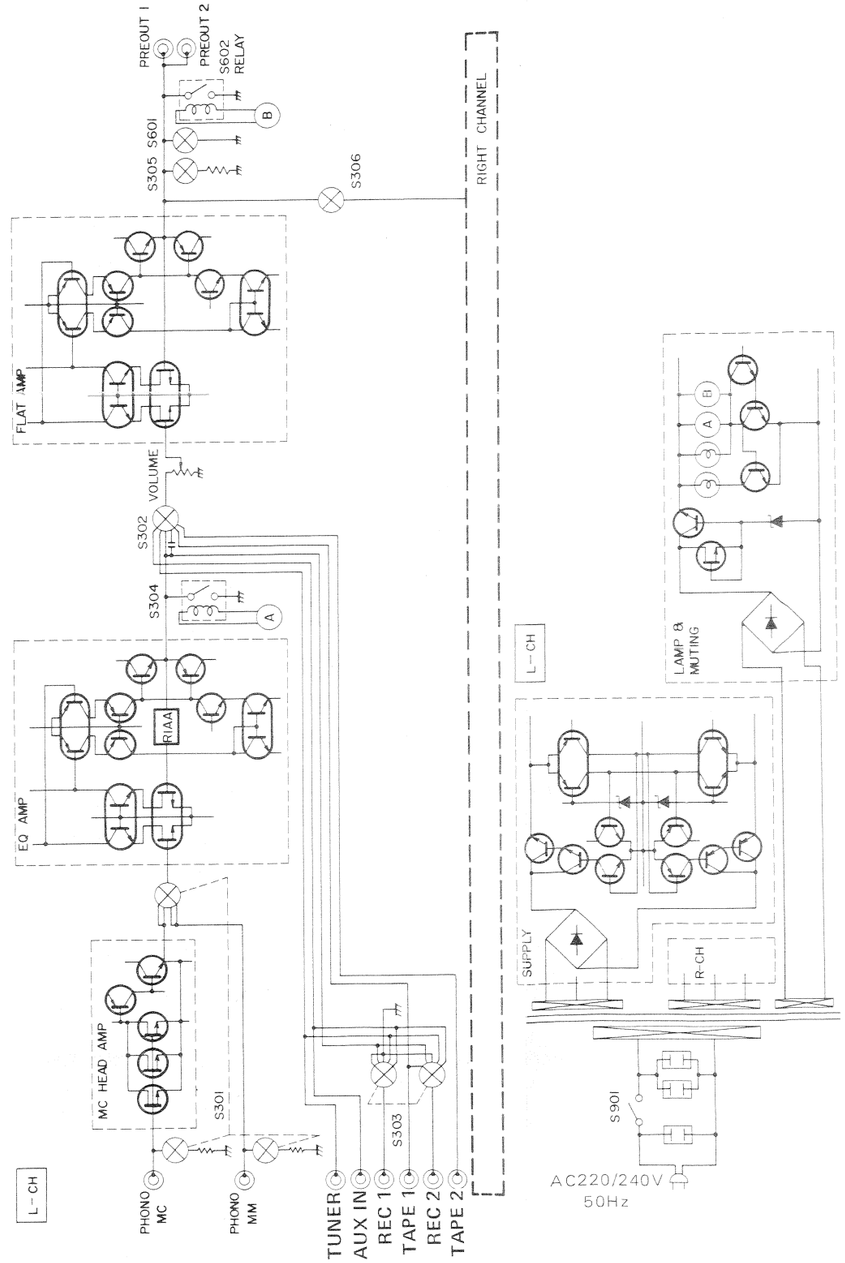


Figure 8

3. DISASSEMBLY INSTRUCTIONS

TOP COVER REMOVAL

1. Remove eight screws Ⓐ (3ϕ x 8mm) and the top cover can be removed as shown in Figure 3.

FRONT PANEL REMOVAL

1. Remove the top cover as shown in Figure 3.
2. Loosen five screws Ⓑ to pull five knobs out as shown in Figures 4 and 5.
3. Remove six screws Ⓓ, Ⓔ (3ϕ x 8mm) and the front panel can be removed out as shown in Figure 4 and Figure 6.

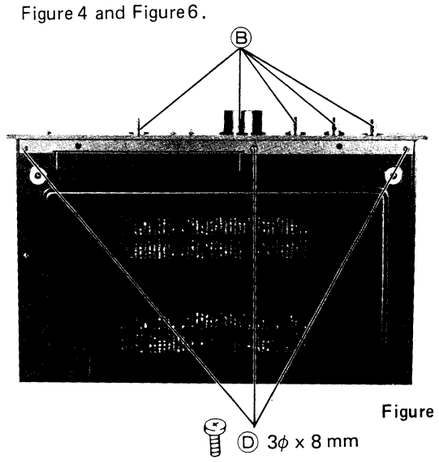


Figure 4

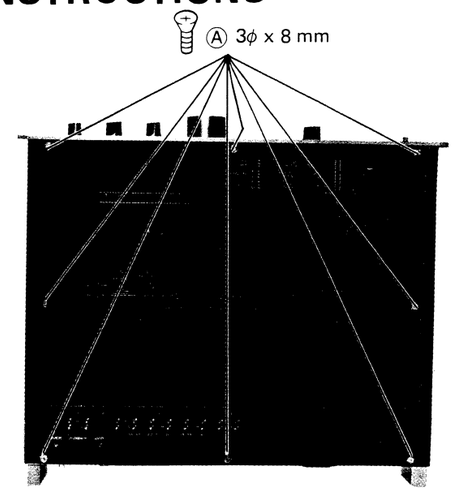


Figure 3

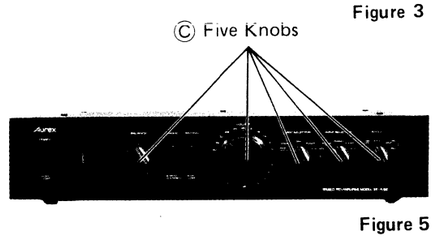


Figure 5

BOTTOM PLATE REMOVAL

1. Remove five screws Ⓕ (3ϕ x 8mm) and the bottom plate can be removed out as shown in Figure 7.

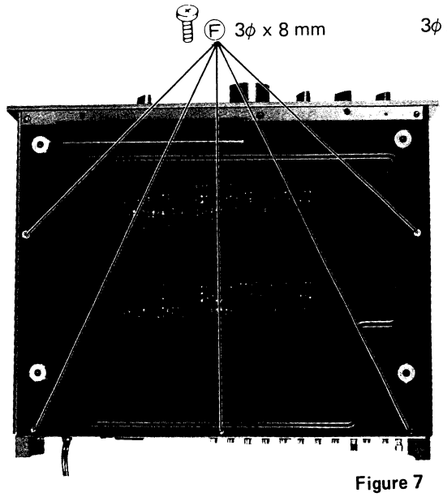


Figure 7

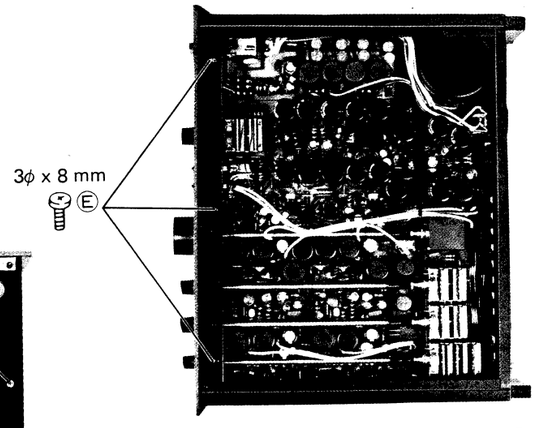


Figure 6

4. BLOCK DIAGRAM

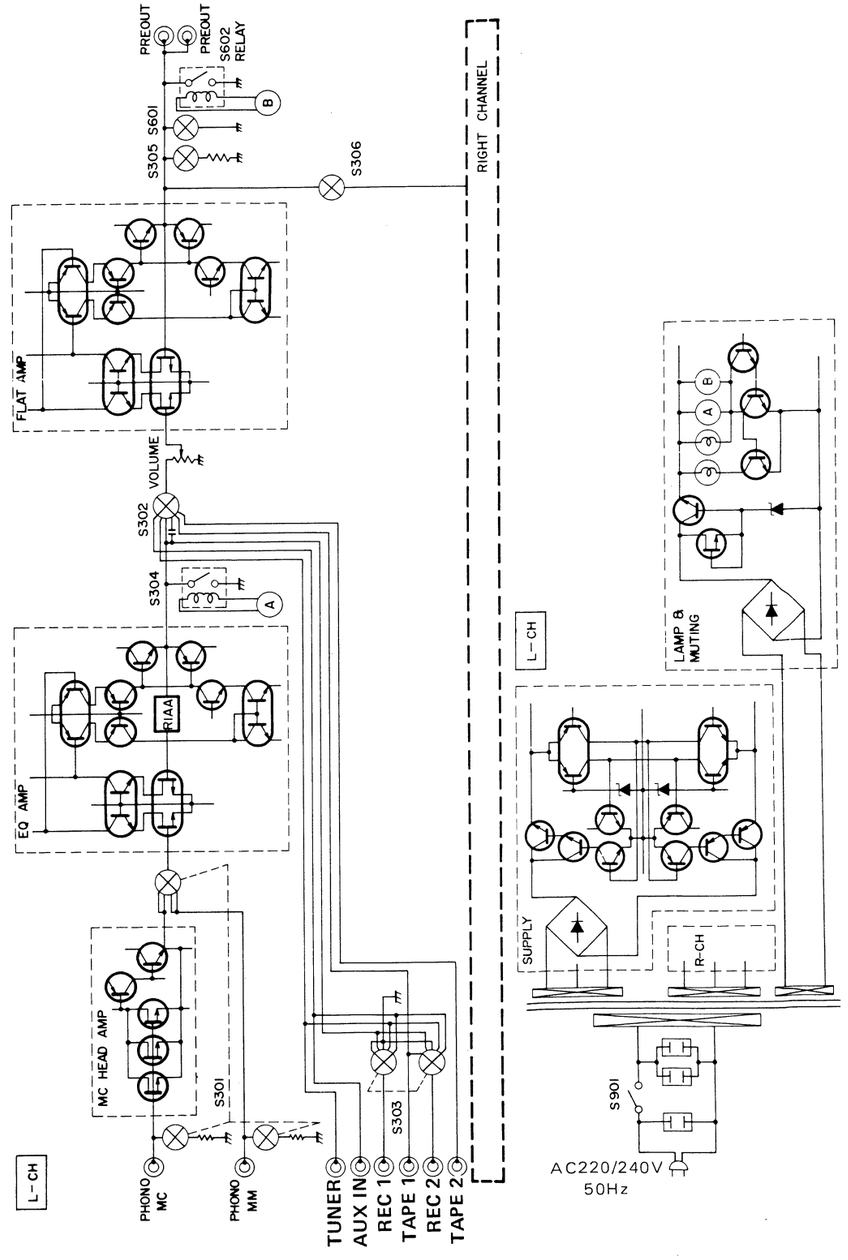


Figure 8

5. P.C. BOARD PARTS LOCATIONS

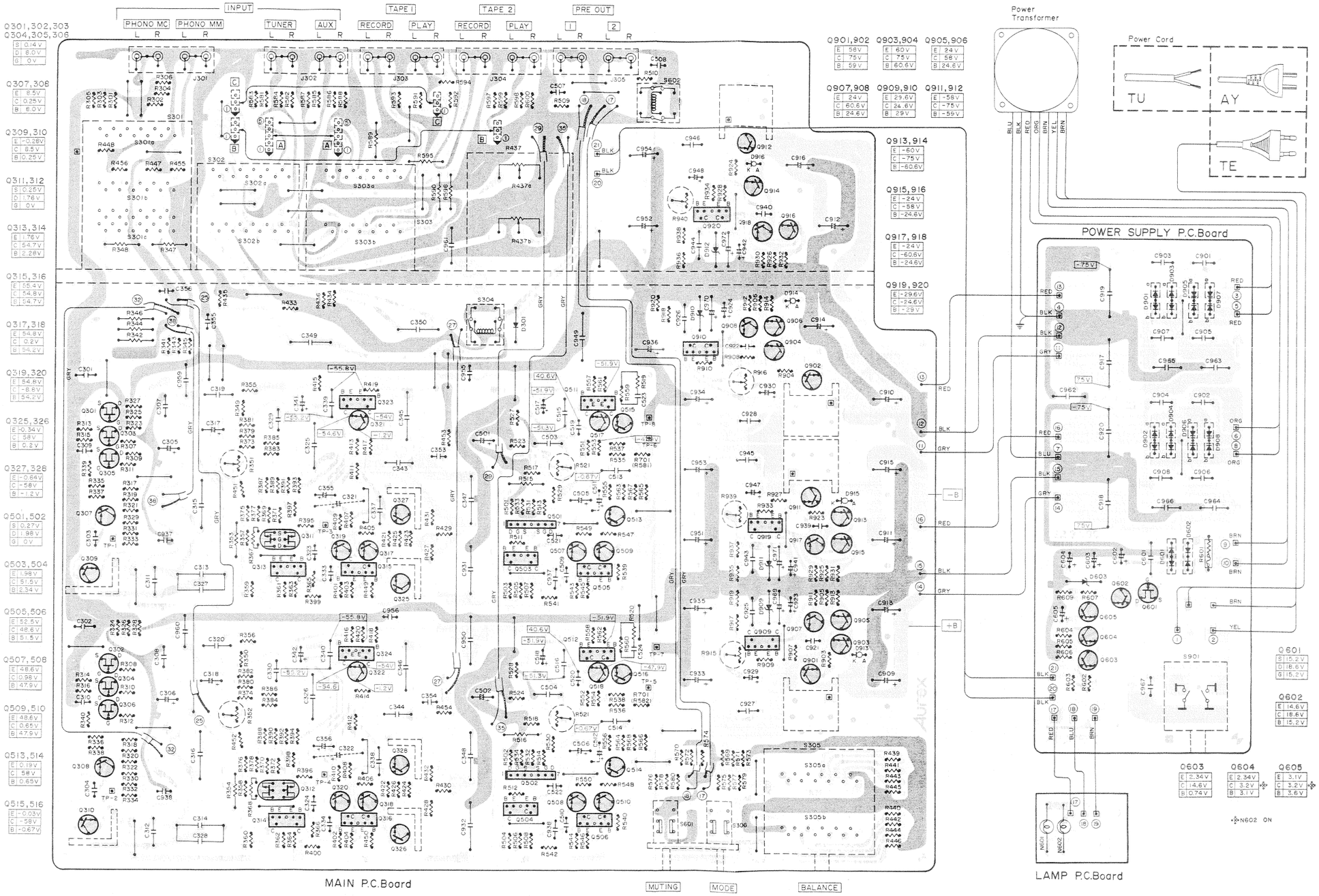
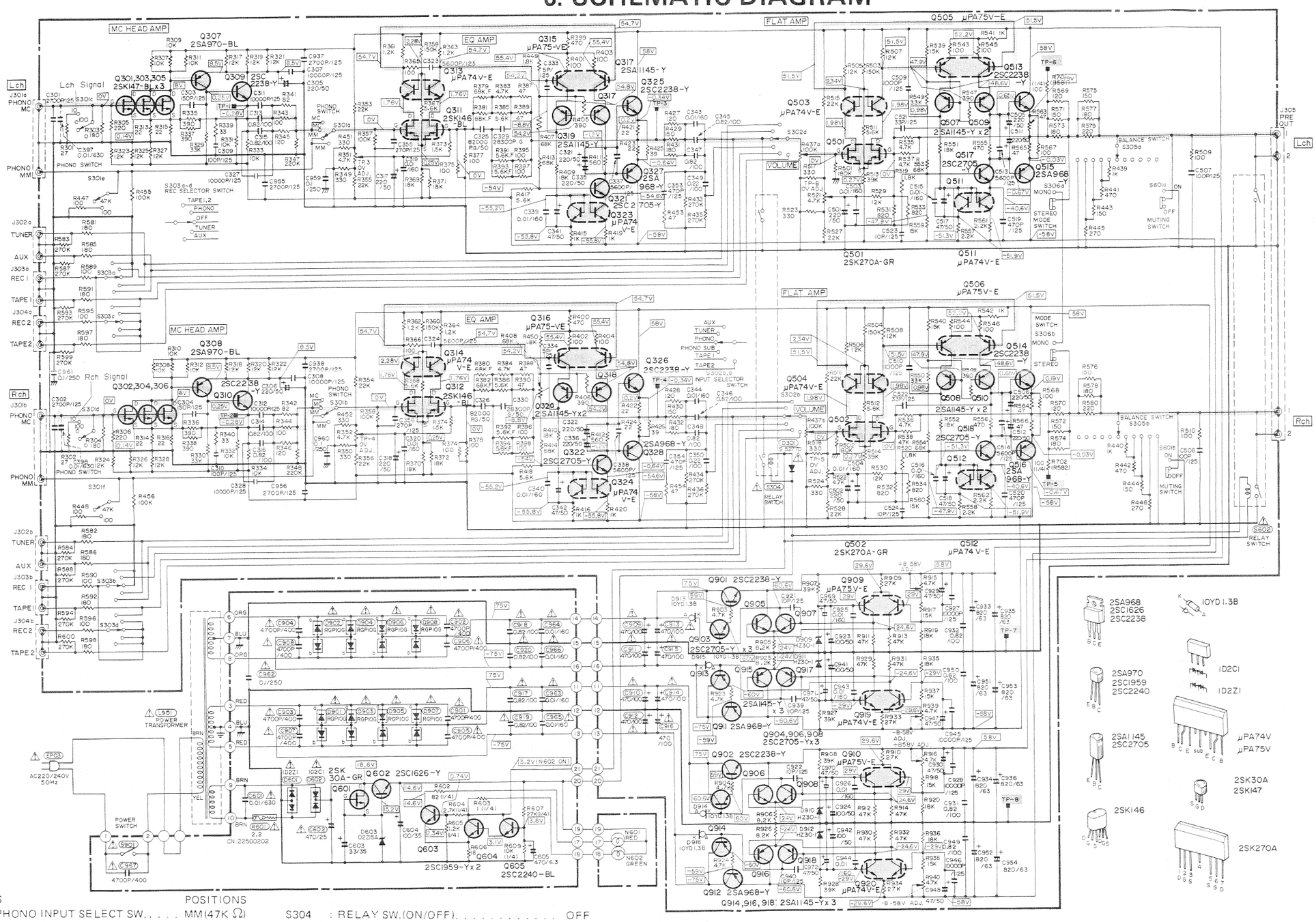


Figure 9

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

6. SCHEMATIC DIAGRAM



SWITCHES	POSITIONS
S301a-f : PHONO INPUT SELECT SW. (CARTRIDGE LOAD) MM(100Ω, 47K Ω)/MC(100Ω, 10Ω)	MM(47K Ω)
S302a-b : INPUT SELECT SW. TAPE2/TAPE1/PHONO(SUB)/-PHONO/TUNER/AUX	PHONO
S303a-d : REC SELECT SW. TAPE1 2/PHONO/OFF/TUNER/AUX	OFF
S304 : RELAY SW.(ON/OFF)	OFF
S305a-b : BALANCE ADJ. SW. −0.5/−1.0/−2.0/−3.0/−60 dB	0 dB
S306 : MODE SW.(STEREO/MONO)	STEREO
S601a-b : MUTING SW.(ON/OFF)	OFF
S602 : RELAY SW.(ON/OFF)	OFF
S901 : POWER SW.(ON/OFF)	OFF

Figure 10

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

7. EXPLODED VIEW CABINET

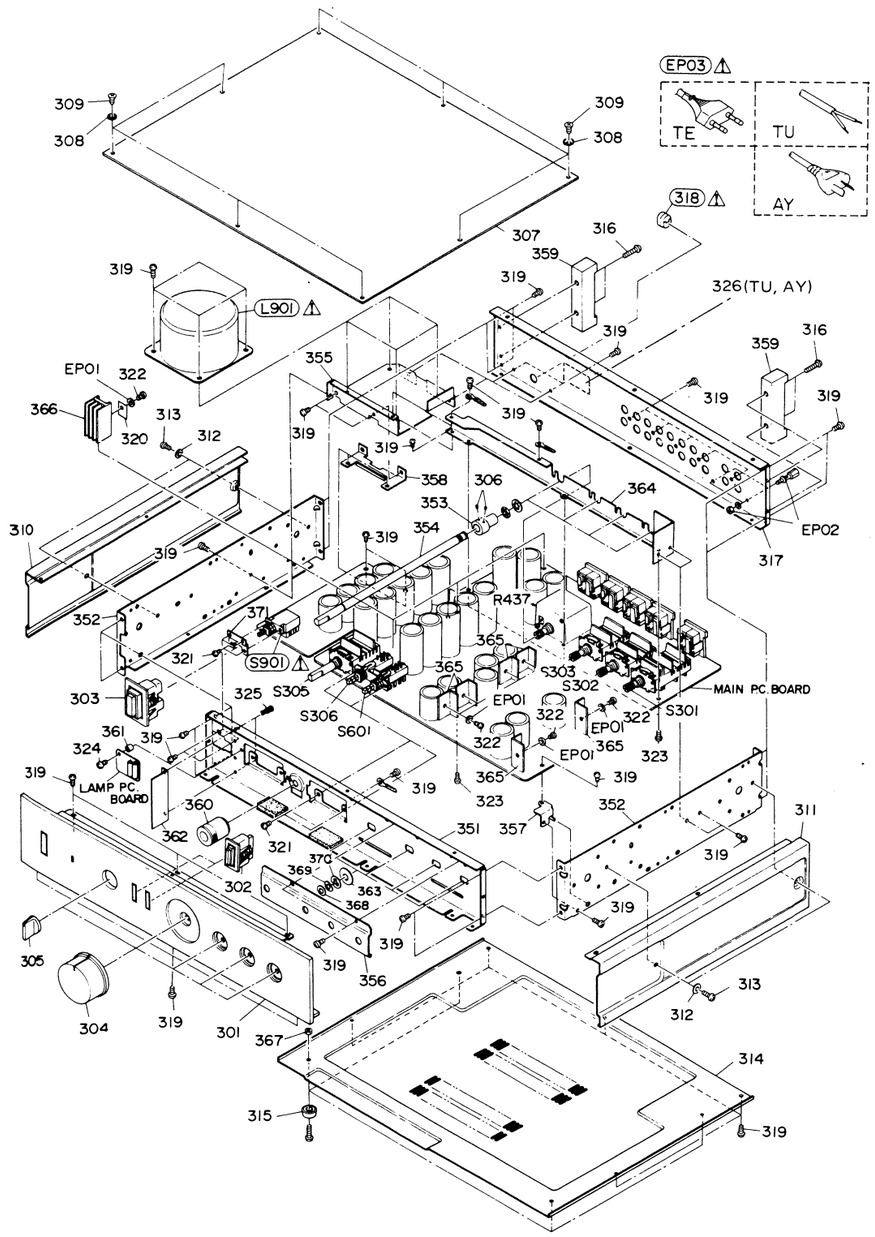


Figure 11

NOTE: Parts excluded in the parts list are not available as replacement parts.

8. PARTS LIST (CABINET)

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replace only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
301	22825099	Front Panel Ass'y
302	22824376	Knob Ass'y, Mode/Muting
303	22824380	Knob Ass'y, Power
304	22845363	Knob, Volume (with screw)
305	22845370	Knob, Rec/Input/Phono/-Balance (with screw)
306	22707433	Screw, 3ϕ x 3mm
307	22841327	Top Cover
308	22703248	Washer, 3ϕ, Top Cover
309	22707304	Screw, 3ϕ x 8mm, Top Cover
310	22841287	Side Plate, Left
311	22841288	Side Plate, Right
312	22703143	Washer, 4ϕ, Side Plate
313	22707009	Screw, 4ϕ x 8mm, BLK
314	22712504	Bottom Plate
315	22874033	Foot

Symbol No.	Part No.	Description
316	22707038	Screw, 3ϕ x 16mm, BLK Tapping
317	22714180	Jack Plate
⚠ 318	25845528	Cord Bush
319	22701326	Screw, 3ϕ x 8mm, BLK Tapping
320	22756447	Washer, Transistor
321	22707452	Screw, 3ϕ x 5mm, BID
322	22701325	Screw, 3ϕ x 8mm, BID Tapping
323	22707327	Screw, 3ϕ x 8mm, Chrome, Tapping
324	22707116	Screw, 3ϕ x 10mm, Tapping, RED
325	22705021	Plastic Rivet, 3ϕ x 3.5mm
326	22900181	Name Label (TU, AY)

9. PARTS LIST

Symbol No.	Part No.	Description
TRANSISTORS & DIODES		
Q301, 302	A6042462	Transistor, 2SK147-BL
303, 304		
305, 306		
Q307, 308	A6533645	Transistor, 2SA970NEW-BL
Q309, 310	A6325620	Transistor, 2SC2238-Y
Q311, 312	A6042310	Transistor, 2SK146-BL
Q313, 314	22114920	Transistor, μPA74V-E-F/E
Q315, 316	22114921	Transistor, μPA75V-E-F/E
Q317, 318	A6540520	Transistor, 2SA1145-Y-O/Y
319, 320		
Q321, 322	A6334820	Transistor, 2SC2705-Y-O/Y
Q323, 324	22114920	Transistor, μPA74V-E-F/E
Q325, 326	A6325620	Transistor, 2SC2238-Y
Q327, 328	A6533420	Transistor, 2SA968-Y
Q501, 502	A6046010	Transistor, 2SK270A-GR-Y/BL
Q503, 504	22114920	Transistor, μPA74V-E-F/E
Q505, 506	22114921	Transistor, μPA75V-E-F/E
Q507, 508	A6540520	Transistor, 2SA1145-Y-O/Y
509, 510		

Symbol No.	Part No.	Description
Q511, 512	22114920	Transistor, μPA74V-E-F/E
Q513, 514	A6325620	Transistor, 2SC2238-Y
Q515, 516	A6533420	Transistor, 2SA968-Y
Q517, 518	A6334820	Transistor, 2SC2705-Y-O/Y
Q601	A6048370	Transistor, 2SK30A-TM. GR
Q602	A6314346	Transistor, 2SC1626-Y
Q603, 604	A6319300	Transistor, 2SC1959NEW-Y
Q605	A6325845	Transistor, 2SC2240NEW-BL
Q901, 902	A6325620	Transistor, 2SC2238-Y
Q903, 904	A6334820	Transistor, 2SC2705-Y-O/Y
905, 906		
907, 908		
Q909, 910	22114921	Transistor, μPA75V-E-F/E
Q911, 912	A6533420	Transistor, 2SA968-Y
Q913, 914	A6540520	Transistor, 2SA1145-Y-O/Y
915, 916		
917, 918		
Q919, 920	22114920	Transistor, μPA74V-E-F/E

Symbol No.	Part No.	Description
⚠ D301	A7978389	Diode, S5277D, LC6
⚠ D601	A7682061	Diode, 1D2Z1 (T)
⚠ D602	A7682021	Diode, 1D2C1 (T)
D603	A7287900	Diode, 02Z15A
⚠ D901a-b	22115774	Diode, RGP10G
⚠ D902a-b	22115774	Diode, RGP10G
⚠ D903a-b	22115774	Diode, RGP10G
⚠ D904a-b	22115774	Diode, RGP10G
⚠ D905a-b	22115774	Diode, RGP10G
⚠ D906a-b	22115774	Diode, RGP10G
⚠ D907a-b	22115774	Diode, RGP10G
⚠ D908a-b	22115774	Diode, RGP10G
D909, 910 911, 912	22115591	Diode, HZ30-1
D913, 914 915, 916	22115718	Diode, 10YD1.3B
EP01	A8012230	Spacer, AC223
ELECTRICAL PARTS		
⚠ L901	22224119	Transformer, Power (TE)
⚠ L901	22224120	Transformer, Power (TU, AY)
S301a-f	22195880	Switch, Rotary, PHONO Selector (MC/MM)
S302a-b	22195879	Switch, Rotary, INPUT Selector AUX/TUNER/PHONO/PHONO SUB/TAPE 1/TAPE 2
S303a-d	22195881	Switch, Rotary, REC Selector TAPE 1, 2/PHONO/OFF/-TUNER/AUX
⚠ S304	22148672	Switch, Relay
S305a-b	22195882	Switch, Rotary, Blance
S306	22195883	Switch, Push, Mode
S601	22195883	Switch, Push, Muting
⚠ S602	22148672	Switch, Relay
⚠ S901	22146295	Switch, Push, Power
J301, 302 303, 304 305	22163885	Jack, US4P
N601	22113548	Lamp, 14V, 50mA (RED)
N602	22113531	Lamp, 14V, 50mA (GRN)
EP02	22162327	Terminal, Ground
⚠ EP03	22176571	Power Cord (TE)
⚠ EP03	22176628	Power Cord (TU)
⚠ EP03	22176588	Power Cord (AY)

Symbol No.	Part No.	Description
CAPACITORS		
G = ±2%, K = ±10%, M = ±20%, P = −0 + 100% CD = Ceramic Disk, EL = Electrolytic, MPF = Metalized Polyester Film, CS = Copper Leaf Stylene.		
C301, 302	22380227	CS, 2700pF, 125V, K
C303, 304	22380200	CS, 150pF, 125V, K
C305, 306	22440460	EL, 220mfd, 50V
C307, 308	22380229	CS, 10000pF, 125V, K
C309, 310	22380240	CS, 100pF, 125V, K
C311, 312	22380229	CS, 10000pF, 125V, K
C313, 314 315, 316	22370312	MPF, 0.82mfd, 100V, K
C317, 318	22440460	EL, 220mfd, 50V
C319, 320	22370308	MPF, 0.01mfd, 160V, M
C321, 322	22440426	EL, 220mfd, 50V
C323, 324	22380228	CS, 5600pF, 125V, K
C325, 326	22380231	CS, 82000pF, 50V, G
C327, 328	22380229	CS, 10000pF, 125V, K
C329, 330	22380230	CS, 28300pF, 50V, G
C333, 334	22380181	CS, 5pF, 125V, G
C335, 336	22440460	EL, 220mfd, 50V
C337, 338	22380228	CS, 5600pF, 125V, K
C339, 340	22370308	MPF, 0.01mfd, 160V, M
C341, 342	22440411	EL, 47mfd, 50V
C343, 344	22370308	MPF, 0.01mfd, 160V, M
C345, 346 347, 348	22370312	MPF, 0.82mfd, 100V, K
C349, 350	22370307	MPF, 0.22mfd, 100V, K
C353, 354	22380206	CS, 470pF, 125V, K
C355, 356	22380203	CS, 270pF, 125V, K
C397, 398	22370297	MPF, 0.01mfd, 630V, K
C501, 502	22440460	EL, 220mfd, 50V
C503, 504	22370308	MPF, 0.01mfd, 160V, M
C505, 506	22440460	EL, 220mfd, 50V
C507, 508	22380198	CS, 100pF, 125V, K
C509, 510	22380210	CS, 1000pF, 125V, K
C511, 512	22440426	EL, 220mfd, 50V
C513, 514	22380228	CS, 5600pF, 125V, K
C515, 516	22370308	MPF, 0.01mfd, 160V, M
C517, 518	22440411	EL, 47mfd, 50V
C519, 520	22380206	CS, 470pF, 125V, K
C521, 522	22380192	CS, 33pF, 125V, K
C523, 524	22380186	CS, 10pF, 125V, C
⚠ C601	22370181	MPF, 0.01mfd, 630V, K
⚠ C602	22486471	EL, 470mfd, 25V
C603	22487330	EL, 33mfd, 35V

	Symbol No.	Part No.	Description
	C604	22487101	EL, 100mfd, 35V
	C605	22482471	EL, 470mfd, 6.3V
⚠	C901, 902	22380226	CS, 4700pF, 400V, K
⚠	903, 904		
⚠	905, 906		
⚠	907, 908		
⚠	C909, 910	22440459	EL, 470mfd, 100V
⚠	911, 912		
⚠	913, 914		
⚠	915, 916		
	C917, 918	22370306	MPF, 0.82mfd, 100V, K
	919, 920		
	C921, 922	22380186	CS, 10pF, 125V, C
	C923, 924	22440376	EL, 100mfd, 50V
	C925, 926	22370308	MPF, 0.01mfd, 160V, M
	C927, 928	22380229	CS, 10000pF, 125V, K
	C929, 930	22440411	EL, 47mfd, 50V
	C931, 932	22370306	MPF, 0.82mfd, 100V, K
	C933, 934	22440458	EL, 820mfd, 63V
	935, 936		
	C937, 938	22380227	CS, 2700pF, 125V, K
	C939, 940	22380186	CS, 10pF, 125V, C
	C941, 942	22440376	EL, 100mfd, 50V
	C943, 944	22370308	MPF, 0.01mfd, 160V, M
	C945, 946	22380229	CS, 10000pF, 125V, K
	C947, 948	22440411	EL, 47mfd, 50V
	C949, 950	22370306	MPF, 0.82mfd, 100V, K
	C951, 952	22440458	EL, 820mfd, 63V
	953, 954		
	C955, 956	22380227	CS, 2700pF, 125V, K
	C959, 960	22370186	MPF, 0.1mfd, 250V, K
	C961	22370186	MPF, 0.1mfd, 250V, K
⚠	C962	22370186	MPF, 0.1mfd, 250V, K
	C963, 964	22370308	MPF, 0.01mfd, 160V, M
	965, 966		
⚠	C967	22340150	CD, 4700pF, 400V, M
	C969, 970	22440372	EL, 47mfd, 50V
	971, 972		

RESISTORS

All resistors are carbon film ½W, ±5% unless otherwise noted.

R301, 302	22550347	27 ohm
R303, 304	22550357	180 ohm
R305, 306	22550358	220 ohm
R307, 308	22550378	10K ohm
309, 310		
311, 312		
R313, 314	22550346	22 ohm
315, 316		
R317, 318	22550379	12K ohm
319, 320		
321, 322		
323, 324		
325, 326		
327, 328		
R329, 330	22550384	33K ohm
R331, 332	22550378	10K ohm
333, 334		
R335, 336	22550361	390 ohm
337, 338		
R339, 340	22550348	33 ohm
R341, 342	22540097	82 ohm
R343, 344	22540098	100 ohm
R345, 346	22540099	120 ohm
R347, 348	22540134	220K ohm
R349, 350	22550360	330 ohm
R351, 352	22658256	4.7K ohm, Semi-fixed Variable
R353, 354	22540123	22K ohm
R355, 356	22540123	22K ohm
R357, 358	22550390	100K ohm
R359, 360	22550392	150K ohm
R361, 362	22550367	1.2K ohm
363, 364		
R365, 366	22550354	100 ohm
R367, 368	22550375	5.6K ohm
R369, 370	22550381	18K ohm
371, 372		
R373, 374	22550368	1.5K ohm
R375, 376	22550354	100 ohm
377, 378		
R379, 380	22550336	68K ohm, ±1%
381, 382		
R383, 384	22550374	4.7K ohm
R385, 386	22550375	5.6K ohm
R387, 388	22550350	47 ohm
389, 390		
R391, 392	22550337	5.6K ohm, ±1%
393, 394		
R395, 396	22550354	100 ohm
397, 398		
R399, 400	22550362	470 ohm
R401, 402	22550354	100 ohm
403, 404		
R405, 406	22550361	390 ohm
R407, 408	22550388	68K ohm
R409, 410	22550381	18K ohm
R411, 412	22550363	560 ohm
R413, 414	22550388	68K ohm
R415, 416	22550366	1K ohm
R417, 418	22550375	5.6K ohm
R419, 420	22550366	1K ohm

Symbol No.	Part No.	Description
R421, 422	22550346	22 ohm
423, 424		
R425, 426	22550349	39 ohm
R427, 428	22550355	120 ohm
R429, 430	22550356	150 ohm
R431, 432	22550357	180 ohm
R433, 434	22550395	270K ohm
435, 436		
R437	22650457	100K ohm, Variable, Volume
R439, 440	22550366	1K ohm
R441, 442	22550362	470 ohm
R443, 444	22550356	150 ohm
R445, 446	22550359	270 ohm
R447, 448	22540098	100 ohm
R449, 450	22550369	1.8K ohm
R451, 452	22550360	330 ohm
R453, 454	22550350	47 ohm
R455, 456	22550390	100K ohm
R501, 502	22550393	180K ohm
R503, 504	22550392	150K ohm
R505, 506	22550379	12K ohm
507, 508		
R509, 510	22550354	100 ohm
R511, 512	22550375	5.6K ohm
R513, 514	22550385	39K ohm
R515, 516	22540123	22K ohm
R517, 518	22550360	330 ohm
R519, 520	22540112	1.8K ohm
R521, 522	22658256	4.7K ohm, Semi-fixed Variable
R523, 524	22550360	330 ohm
R527, 528	22550382	22K ohm
R529, 530	22550379	12K ohm
R531, 532	22550365	820 ohm
533, 534		
R535, 536	22550374	4.7K ohm
537, 538		
R539, 540	22550380	15K ohm
R541, 542	22550366	1K ohm
R543, 544	22550354	100 ohm
545, 546		
R547, 548	22550361	390 ohm
R549, 550	22550384	33K ohm
R551, 552	22550381	18K ohm
R553, 554	22550388	68K ohm
R555, 556	22550362	470 ohm
R557, 558	22550370	2.2K ohm
R559, 560	22550380	15K ohm
R561, 562	22550370	2.2K ohm
R563, 564	22550350	47 ohm
565, 566		
R567, 568	22550354	100 ohm
R569, 570	22550355	120 ohm

Symbol No.	Part No.	Description
R571, 572	22550356	150 ohm
R573, 574	22550357	180 ohm
R575, 576	22550356	150 ohm
R577, 578	22550357	180 ohm
R579, 580	22550358	220 ohm
R581, 582	22550357	180 ohm
R583, 584	22550395	270K ohm
R585, 586	22550357	180 ohm
R587, 588	22550395	270K ohm
R589, 590	22540098	100 ohm
R591, 592	22550357	180 ohm
R593, 594	22550395	270K ohm
R595, 596	22540098	100 ohm
R597, 598	22550357	180 ohm
R599, 600	22550395	270K ohm
⚠ R601	22500202	2.2 ohm, Fusible
R602	22555820	82 ohm, ¼W
R603	22555109	1 ohm, ¼W
R604	22555272	2.7K ohm, ¼W
R605	22555122	1.2K ohm, ¼W
R606	22550406	18 ohm
R607	22555273	27K ohm, ¼W
R609	22555103	10K ohm, ¼W
R701, 702	22555101	100 ohm, ¼W
R903, 904	22550374	4.7K ohm
R905, 906	22550377	8.2K ohm
R907, 908	22550385	39K ohm
R909, 910	22550383	27K ohm
R911, 912	22550386	47K ohm
913, 914		
R915, 916	22658256	4.7K ohm, Semi-fixed Variable
R917, 918	22550380	15K ohm
R919, 920	22550381	18K ohm
R923, 924	22550374	4.7K ohm
R925, 926	22550377	8.2K ohm
R927, 928	22550385	39K ohm
R929, 930	22550386	47K ohm
931, 932		
R933, 934	22550383	27K ohm
R935, 936	22550381	18K ohm
R937, 938	22550380	15K ohm
R939, 940	22658256	4.7K ohm, Semi-fixed Variable

ACCESSORIES

AC01	22164311	Plug, US1P
AC02	22170398	Connector Cord
AC03	'22903352	Owner's Manual